The number of damages caused by biogenic sulfuric acid corrosion (BSA) is increasing. The development of materials resistant to BSA requires testing methods that allow for a testing of the materials that is both oriented towards practice and accelerated. To achieve this, test rigs were setup at Fraunhofer UMSICHT. In cooperation with the University of Duisburg-Essen (Dept. of Chemistry, Biofilm Centre, Prof. Dr. Wolfgang Sand), weathering tests were conducted to assess the BSA resistance of materials. The results provided indications for a targeted optimization and further development of the materials.

Keywords
- BSA
- Damage to material
- Material testing
- Microorganisms
- Analytics

Industries
- Wastewater treatment
- Biogas plants
- Canal construction
- Drinking water supply
- Sewage engineering
Test cubes in original condition

Test system (overview)

Our services

- Conducting weathering tests
- Use of different materials and substrates
- Use of different microorganisms
- Accompanying microbial analytics
- Material optimization

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Development of biogenic sulfuric acid corrosion in the sewer system*

Absorption of H₂S, oxidation to sulfur, formation of H₂SO₄ acid attack

H₂S emission into the gaseous space

dissolved sulfide / dissolved H₂S gas

overall sulfide in wastewater

Sulfide development by bacteria

inorganic sulfur compounds

organic sulfur compounds